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EXAMINER	
PIERCE, JEREMY R	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/089,561	MANGOLD ET AL.	
	Examiner	Art Unit	
	Jeremy R. Pierce	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on March 22, 2004 has been entered. Claim 19 has been amended. Claim 20 has been cancelled. The amendment to claim 19 is sufficient to withdraw the 35 USC 112 rejection set forth in section 2 of the last Office Action.

Terminal Disclaimer

2. The terminal disclaimer filed on March 22, 2004 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of U.S. Patent No. 6,630,611 has been reviewed and is accepted. The terminal disclaimer has been recorded, and renders moot the 35 USC 103 rejections and double patenting rejections set forth in sections 14, 15, 17, and 18 of the last Office Action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 5, 7-10, and 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Newkirk (U.S. Patent No. 4,883,707).

Newkirk discloses a nonwoven fabric comprising a carded web layer having an average denier of 3 or greater bonded to a thermoplastic fibrous layer having an average denier of 3 or less (column 2, lines 39-44). The low denier layer meets Applicant's claim limitations for the upper layer because the claimed range of at most 3.5 dtex falls within less than 3 denier the low denier layer comprises bicomponent fibers with optionally 30% single component fiber (column 3, lines 42-55). The high denier layer meets Applicant's claim limitations for the lower layer because the claimed range of between 4 and 10 dtex falls within greater than 3 denier and the fibers are bicomponent fibers with the higher melting component made from PET (column 3, lines 20-34). Also, the lower melting point part of the bi-component fibers are the only ones that melt, so they would have a lower melting point than the mono-component fibers (column 4, lines 2-6). With regard to claims 4 and 5, Newkirk discloses the low denier layer has a basis weight in the range of 5 to 20 grams per square yard (column 2, line 59). With regard to claims 7-9, the high denier layer may be comprised entirely of bicomponent fibers (column 3, lines 4-7). With regard to claim 10, the fiber may be sheath/core (column 3, line 6). With regard to claim 14, the lower melting point component may be polyethylene (column 3, line 25). With regard to claim 15, the coverstock disclosed by Newkirk is used with an absorbent layer and an impermeable outer covering (column 1, lines 15-18).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 4-10, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barge et al. (U.S. Patent No. 5,989,688).

Barge et al. disclose a composite nonwoven for controlled acquisition and distribution of liquid comprising a first support layer and a first bulky layer, the two layers being bonded by thermobonding (Abstract). The support layer may function as the coverstock in an absorbent article (column 4, lines 32-39), and would therefore be the body-contacting layer. Barge et al. disclose the support layer fibers preferably have a dtex of 1.7 to 3.3 (column 6, line 35). Barge et al. also disclose the support layer may be made from a mixture of single component fibers and bicomponent fibers (column 6, lines 18-28). However, Barge et al. fail to disclose that this mixture comprises 30-70% by weight bicomponent fibers. However, discovering the optimum ratio of bicomponent fibers to single component fibers would be an obvious matter of optimizing a result effective variable. Addition of more bicomponent fibers in the nonwoven would strengthen the bonding of the fabric at the expense of feel and increased stiffness. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use between 30-70% bicomponent fibers in the support layer of Barge et al. since Barge et al. disclose using a blend of single component and bicomponent fibers and it has been held that discovering an optimum value of a result effective variable

involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The bulky layer meets the limitations of the lower layer because Barge et al. disclose the fibers are in the range of 5-12 dtex (column 6, lines 63-64) and may consist essentially of bicomponent fibers (column 6, line 46) that contain PET (column 6, lines 7-11). With regard to claims 4 and 5, Barge et al. disclose the support layer may weight between 6 and 20 grams per square meter (column 7, line 65 –column 8, line 7). With regard to claim 6, the fibers are treated to be hydrophilic (column 7, lines 38-39). With regard to claims 7-9, Barge et al. disclose the bulky layer may consist essentially of bicomponent fibers (column 6, line 46). With regard to claim 10, the fibers may be sheath/core fibers (column 7, lines 41-43). With regard to claim 14, the lower melting part may be polyethylene (column 6, line 9). With regard to claim 15, Newkirk discloses hygienic absorbent products also comprise an absorbent core and an impermeable backsheet (column 1, lines 15-23).

7. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newkirk in view of Winebarger (U.S. Patent No. 5,057,357).

Newkirk discloses pattern bonding through air (column 4, lines 13-24), but fail to disclose creating a textured pattern through calendering. Winebarger teach that a softer coverstock may be achieved by calendering the nonwoven and creating a pattern with a bond area of 7.5 to 30% (column 5, lines 13-16). It would have been obvious to a person having ordinary skill in the art at the time of the invention to create a textured pattern by calendering the coverstock of Newkirk in order to create a softer material, as taught by Winebarger.

8. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barge et al. in view of Winebarger.

Barge et al. disclose the preferred method of bonding is by thermobonding using calender bonding (column 9, lines 19-22), but do not disclose forming a textured pattern. Winebarger teach that a softer coverstock may be achieved by calendering the nonwoven and creating a pattern with a bond area of 7.5 to 30% (column 5, lines 13-16). It would have been obvious to a person having ordinary skill in the art at the time of the invention to create a textured pattern by calendering the coverstock of Barge et al. in order to create a softer material, as taught by Winebarger.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Newkirk in view of Barge et al.

Newkirk fail to disclose treating the upper layer with a hydrophilic finish. Barge et al. disclose that coverstock fabrics are preferably treated to be hydrophilic in order to better acquire and distribute aqueous liquids such as urine (column 7, lines 33-35). It would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the topsheet of Newkirk with a hydrophilic finish in order to create a coverstock that can better acquire and distribute aqueous liquids, as taught by Barge et al.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Newkirk in view of Lloyd et al. (U.S. Statutory Invention Reg. No. H1698).

Newkirk does not disclose the lower layer to contain eccentric core/sheath fibers. Lloyd et al. teach that bicomponent core/sheath fibers having an eccentric core are

preferably used in absorbent articles to provide a lower density structure due to the greater tendency of such fibers to take on a curled shape (column 8, lines 2-7). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use eccentric sheath/core fibers in the absorbent article of Newkirk in order to provide a lower density structure for acquiring and distributing liquids, as taught by Lloyd et al.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barge et al. in view of Lloyd et al.

Barge et al. not disclose the lower layer to contain eccentric core/sheath fibers. Lloyd et al. teach that bicomponent core/sheath fibers having an eccentric core are preferably used in absorbent articles to provide a lower density structure due to the greater tendency of such fibers to take on a curled shape (column 8, lines 2-7). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use eccentric sheath/core fibers in the absorbent article of Barge et al. in order to provide a lower density structure for acquiring and distributing liquids, as taught by Lloyd et al.

12. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newkirk in view of Hermann et al. (DE 4,338,326). An English translation to the reference has been ordered and will be provided with the next Office Action.

Newkirk discloses the limitations of the fluid-permeable layer as set forth above in section 4, but Newkirk fails to disclose the structure for the absorbent core or retaining layer. Hermann et al. disclose an absorbent core material having multiple layers. It would have been obvious to a person having ordinary skill in the art at the

time of the invention to use the absorbent core of Hermann et al. in the product of Newkirk in order to provide an absorbent product with sufficient acquisition and distribution properties, as taught by Hermann et al (English translation, p. 3). With regard to claim 16, the upper layer 26 of Hermann et al. is made of cross-linked cellulose to provide distribution (English translation, p. 6). Hermann et al. teach adding superabsorbent material to upper layer 26 (English translation, p. 9), but do not disclose the amount. The amount of superabsorbent material is a result effective variable that would affect the absorption of liquid properties and the distribution properties of the upper layer. Hermann et al. recognize this fact because the upper layer is designed to distribute liquid, whereas the lower layer is design to store liquid, and the presence of superabsorbent particles should decrease as one moves from the storage layer up to the distribution layer (English translation, p. 7). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use between 8 and 15% superabsorbent material in the upper layer in order to provide optimal absorbency and distribution of liquid, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. With regard to claim 17, Hermann et al. teach a lower layer 28 of conventional cellulose fibers and superabsorbent being present in an amount between 10 and 98% by weight (English translation, p. 7). With respect to the ratio of fiber mass to fluid storage limitations recited in claims 16 and 17, although Hermann et al. do not explicitly teach the ratio of fiber mass to fluid storage, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. cellulose) and in the similar

production steps (i.e. cross-linking for the upper layer and using conventional cellulose for the lower layer) used to produce the absorbent core. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, adjusting the fluid absorption capabilities of the cellulosic fiber would be optimizing a result effective variable. Hermann et al. specifically disclose that the absorption capacity of the cellulose fibers of the upper layer 26 is lower than that of the cellulosic fibers in the lower layer 28 (English translation, p. 4). It would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the upper layer with fluid to fiber ratio of 0.6 to 0.9 and the lower layer with a fluid to fiber ratio of 1.0 to 1.4, since Hermann et al. disclose that the upper layer should have a smaller value than the lower layer, and it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. With regard to claim 18, layer 28 is disposed beneath layer 26 (Figure 1). With regard to claim 19, Hermann et al. disclose an additional lower layer 22 made of cellulosic fibers that may contain 0% superabsorbent material (English translation, p. 5 and Figure 1).

13. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barge et al. in view of Hermann et al.

Barge et al. disclose the limitations of the fluid-permeable layer as set forth above in section 6, and also teach the addition of various layers to obtain desired characteristics of acquisition and distribution (column 1, lines 15-27). But Barge et al. fail to disclose the structure for the absorbent core or retaining layer. Hermann et al. disclose an absorbent core material having multiple layers. It would have been obvious

to a person having ordinary skill in the art at the time of the invention to use the absorbent core of Hermann et al. in the product of Barge et al. in order to provide an absorbent product with sufficient acquisition and distribution properties, as taught by Hermann et al (English translation, p. 3). With regard to claim 16, the upper layer 26 is made of cross-linked cellulose to provide distribution (English translation p.5). Hermann et al. teach adding superabsorbent material to upper layer 26 (column 4, lines 33-39), but do not disclose the amount. The amount of superabsorbent material is a result effective variable that would affect the absorption of liquid properties and the distribution properties of the upper layer. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use between 8 and 15% superabsorbent material in the upper layer in order to provide optimal absorbency and distribution of liquid, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. With regard to claim 17, Hermann et al. teach a lower layer 28 of conventional cellulose fibers and superabsorbent being present in an amount between 10 and 98% by weight (English translation, p. 7). With respect to the ratio of fiber mass to fluid storage limitations recited in claims 16 and 17, although Hermann et al. do not explicitly teach the ratio of fiber mass to fluid storage, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. cellulose) and in the similar production steps (i.e. cross-linking for the upper layer and using conventional cellulose for the lower layer) used to produce the absorbent core. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative,

adjusting the fluid absorption capabilities of the cellulosic fiber would be optimizing a result effective variable. Hermann et al. specifically disclose that the absorption capacity of the cellulose fibers of the upper layer 26 is lower than that of the cellulosic fibers in the lower layer 28 (English translation, p. 4). It would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the upper layer with fluid to fiber ratio of 0.6 to 0.9 and the lower layer with a fluid to fiber ratio of 1.0 to 1.4, since Hermann et al. disclose that the upper layer should have a smaller value than the lower layer, and it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. With regard to claim 18, layer 28 is disposed beneath layer 26 (Figure 1). With regard to claim 19, Hermann et al. disclose an additional lower layer 22 made of cellulosic fibers that may contain 0% superabsorbent material (English translation, p. 5 and Figure 1).

Response to Arguments

14. Applicant's arguments filed March 22, 2004 have been fully considered but they are not persuasive.

15. Applicant argues that Newkirk does not disclose a composite material where the upper layer is formed of a mixture of mono-component fibers and bi-component fibers, asserting that Newkirk does not use mono-component fibers at all. However, Newkirk specifically discloses inclusion of 25-30% mono-component fibers into the layer to increase softness (column 3, lines 43-55).

16. Applicant argues that the denier of Newkirk's fiber is neither the same material nor the same quantity as the bi-component fiber denier of the present invention because Newkirk teach the denier to fall within the range of 1.5 to 3 depending on the material used. However, Newkirk also teach a carded web layer comprising crimped thermoplastic fibers having an average denier of 3 or greater (column 2, lines 39-42). So Newkirk disclose the denier to be greater than 3. This falls within Applicant's claimed range of 4 to 10 denier.

17. Applicant argues that Newkirk does not disclose a composite material where the percentage of bi-component fibers amount to 30-70% by weight in the upper layer and where the lower layer includes at least 40% bi-component fibers. However, Newkirk discloses the layers to be made of bi-component fibers, as set forth in the rejection, and that a layer may be substituted with up to 30% matrix fibers for increased softness (column 3, lines 43-55).

18. Applicant argues that the primary disclosure of Barge does not have the support layer as the body contacting layer. However, Barge does disclose the support layer can serve as the topsheet body contacting layer (column 9, lines 9-12). The support layer is disclosed as acting as the top layer, so the claim limitation is met.

19. Applicant argues that Barge discloses the support layer will typically have a fineness in the range of 1.7-3.3 dtex and when the bulk layer includes bi-component fibers, these will typically have a similar fineness. However, Barge disclose in the same paragraph that fineness of the fibers of the various layers may be varied as required to vary characteristics such as liquid control (column 6, lines 29-30). Later, Barge also

disclose the bulky layer has fibers in the range of 5-12 dtex, which is within Applicant's claimed range of 4-10 dtex. Barge does not teach away from using different levels of fineness.

20. Applicant argues that there is no conjunction of single component fibers and bicomponent fibers in Barge. However, Barge discloses the support layer may comprise a mix of single component and bicomponent fibers (column 6, lines 23-25).

21. Applicant argues that it is not obvious to discover the optimum ratio of bicomponent fibers to single component fibers in order to yield the percentage of bicomponent fibers amounting to 30-70% by weight. However, as set forth above, the ratio of binding bicomponent fibers to matrix single component fibers is a known result effective variable in the art of textiles. Adjusting that ratio affects bonding strength and softness, where one increases as the other decreases depending on the amount of binder present. Absent the finding of unexpected results, optimizing such a variable has been held to be within the general skill of a worker in the art.

22. Applicant argues that the fibers in the upper bulky layer and lower bulky layer contradict the fiber ranges set forth in claim of the present invention. However, the upper bulky layer, with a range of 5-12 dtex, anticipates Applicant's claimed 4-10 dtex range for the lower layer. The support layer, having a dtex between 1.7 and 3.3 acts as the topsheet above the upper bulky layer, and anticipates Applicant's claimed range for the top layer. The presence of a lower bulky layer by Barge is not precluded by Applicant's claims.

23. Applicant argues that the combinations of Newkirk with Barge, Newkirk with Winebarger, Newkirk with Lloyd, Barge with Lloyd do not anticipate the limitations of claim 1. However, the Examiner feels that claim 1 limitations are met using the Newkirk and Barge references alone, as set forth above in the rejections.

24. Applicant argues that the high density lofty layer of Newkirk is 3 or greater and that the low denier soft layer of Newkirk is 3 or less, so the combination of Hermann and Newkirk teaches away from claim 16. The Examiner does not understand this argument. Newkirk meets the limitations of the fluid permeable layer recited in the last lines 9-13 of the claim, and Hermann meets the limitations of the fluid retention layer described in lines 4-8 of the claim. Hermann discloses that the absorbent core improves fluid retention properties, so it would be obvious to use that absorbent core in the composite of Newkirk, as set forth above in the rejection.

25. Applicant argues that the crimped thermoplastic fibers of Newkirk teach away from claim 16. However, the fibers in the recited fluid-permeable layer are not precluded from being crimped or thermoplastic. Hermann is used to disclose the cellulosic fibers and superabsorbent material.

26. Applicant requests the Examiner to cite prior art to show that adding between 8 and 15% superabsorbent in the upper level of intralinked cellulose fibers. However, Hermann teaches the limitations of the intralinked cellulosic fibers. Hermann also teaches that superabsorbent can be added to this layer. A person having ordinary skill in the art would know that the amount of superabsorbent that one could add would be a result effective variable, as set forth above. Adding 8 to 15% by weight would not be

unfathomable to one having ordinary skill in the art. Absent unexpected results that come from modifying a known variable, such a modification is obvious.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Pierce whose telephone number is (571) 272-1479. The examiner can normally be reached on Monday-Thursday 7-4:30 and alternate Fridays 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRP

JRP

ELIZABETH M. COLE
PRIMARY EXAMINER